clearly contrast, whereas the bronzy-green suffusion at the base also clearly comes forth. The red-brown band along the hind margin of the posterior wings, which encloses the black points, is also pale yellow."

The name falls as a synonym of ab. *albicans*, Fuchs, *Jahrb. Nass. Ver.*, vol. 42, p. 193, 1889.

(*To be concluded.*)

Some Notes on British Trypetidae.

By M. NIBLETT.

The following notes are compiled from observations made by me during the past few years, and refer mainly to Trypetids reared from the larval stage, with the addition of a few records of captured insects.

The localities where both larvae and imagines were taken were nearly all in the county of Surrey, and include Ranmore Common, Boxhill, Epsom Common, Epsom Downs, Banstead, and Kingswood.

The majority of the species referred to are moderately common, but I thought that perhaps some particulars of their food-plants and times of emergence might prove of some interest.

Urophora cardui, L.—The larvae of this handsome fly inhabit the swellings to be found upon the stems of *Cnicus arvensis*, L. (Creeping Plume Thistle). I have found the galled stems from mid-July onwards, and have had the fly emerge during June and early July of the year following. The galls I find are usually plentiful where the thistles grow in damp situations, and much less so in drier places. The fly I have taken occasionally in July by sweeping thistles. The larvae are at times heavily parasitized by Chalcids.

U. stylata, Fab.—This species is the cause of hard woody galls in the flower-heads of *Carduus nutans*, L. (Musk Thistle), and *Cnicus lanceolatus*, Scop. (Spear Plume Thistle). The larvae I have found from July onwards, the flies emerging in the following June, with occasional specimens during July. Odd specimens of the fly I have swept from thistles and mixed herbage during July.

U. solstitialis, L.—This is another gall-causing species, the hard woody galls are to be found abundantly as a rule, in the flower-heads of *Centaurea nigra*, L. (Black Knapweed), wherever this plant grows. The earliest date I have found the larvae is July 6th, when the galls were beginning to form. I have had the flies emerge in May, June, July and August, the majority coming out in June. I have swept them in some numbers from *C. nigra* during July and August, and on a number of occasions from *Achillea millefolium*, L. (Yarrow). Several species of Chalcids parasitize the larvae, but the flies always seem abundant.

U. quadrifasciata, Mg.—The larvae of this species feed in the flower-heads of *Centaurea nigra*, L. The statements made by numerous writers that it forms a hard woody gall, does not agree with my observations. I have certainly bred it from flower-heads containing galls, but these have definitely been the galls of *U. solstitialis*. I have not found it occur in any numbers, having bred about 30 from several thousand flower-heads. The flies emerged chiefly in June, with occasional specimens in May and July. On only one occasion have I swept the fly, this was towards the end of July upon Epsom Common,

when it literally swarmed, every sweep of the net over patches of *C. nigra* gathering in at least half a dozen. I could have taken scores from the area in which it occurred.

Anomoea (*Phagocarpus*) *antica*, Wied. (*permundus*, Her.).—The larvae of this species live in the fruits of *Crataegus monogyna*, Jacq. (Hawthorn); from a number of these fruits gathered in September, the larvae emerged in early November and pupated, the flies emerging from 25th May to 3rd June of the following year. Perris stated that the larvae pupated in the fruit, while Handlirsch claimed that they pupated in the earth, the latter statement agreeing with my own observations.

Trypeta (*Chaetostomella*) *onotrophes*, Lw.—The larvae of this species live in the flower-heads of various Composites. I have bred the flies from *Serratula tinctoria*, L. (Sawwort), an unrecorded host-plant; *Cnicus palustris*, L. (Marsh Plume Thistle); and *Centaurea nigra*, L.; the latter plant appears to be its favourite host. The larvae may be found in the heads from early autumn until some time in May; they are sometimes to be found among the pappus-hairs and sometimes below the receptacle; they pupate in the head, and I have had the flies emerge from 11th May to 5th July. I have swept this species from *C. nigra*, *C. palustris*, *Arctium majus*, L. (Burdock), and mixed Composites in July and August.

Trypeta (*Terellia*) *serratulae*, L.—This species I have bred from the flower-heads of *Carduus nutans*, L., and *Cnicus lanceolatus*, Scop. I have not found it occur in any numbers, having bred less than a dozen from some hundreds of heads of these thistles, all these emerging in mid-June. I have also swept occasional specimens from *C. nutans*.

Trypeta (*Orellia*) *colon*, Mg.—The larvae live in the flower-heads of *Centaurea scabiosa*, L. (Large Knapweed), in which they pupate, enclosing themselves in cocoons formed of pappus-hairs. The larvae seem to vary somewhat in colour, white to pinkish being most general, though with some there is a distinct yellowish tinge. Some of the larvae seem to prefer the space below the receptacle to pupate in, while others remain above it. The majority of the flies I have bred have emerged in June from flower-heads gathered in August of the preceding year, and onwards, but from a few heads gathered on 19th July with larvae in them, a ♂ of this species emerged on 10th August suggesting the possibility of two broods in a year.

Trypeta (*Orellia*) *florescentiae*, L. (*ruficauda*, Fab.).—The larvae of this species judging from my own observations appear to be confined entirely to the flower-heads of *Cnicus palustris*, L. The larvae are white, pupate in the heads, the flies emerging during June. I should not say that this is an abundant species, many hundreds of thistle-heads examined by me during autumn and winter disclosing only about a dozen larvae. I have swept occasional flies from *C. palustris* in July and August and odd specimens from *C. arvensis*.

Trypeta (*Orellia*) *tussilaginis*, Fab.—On 3rd March, 1932, while examining a number of flower-heads of *Arctium majus*, L., I observed that some of the seeds were rather stout. I removed the end of one and found that it contained a Trypetid larva, from a number of these seeds there emerged in the following June 6 ♂♂ and 8 ♀♀ of *tussilaginis*. *A. majus* has been recorded as a host plant of this species, but I can find no record of the larvae living in the achenes. I have swept a few flies of this species from mixed Composites in July.

Trypeta (*Ceriocera*) *cornuta*, Fab. (*ceratocera*, Hend.).—This species I have bred on a few occasions from flower-heads of *Centaurea scabiosa*, L., all the flies emerging in June. The larvae live and pupate in the heads.

Tephritis (*Xyphosia*) *miliaria*, Schk.—The larvae of this species may be found chiefly in the flower-heads of *Cnicus arvensis*, L. in which they pupate, forming a cocoon of pappus-hairs. I have found the larvae in the heads from July onwards, the flies emerging in the following June. The larvae also may be found at times in the flower-heads of *C. palustris*, L., and upon one occasion I had a fly emerge in September, from *Arctium majus*, L., an unrecorded host-plant, a very unusual time for this species to emerge, suggesting a second brood. The flies I have swept from *C. arvensis*, *C. palustris*, and *A. majus*, during July and August, it being quite a common species in the areas I have worked.

Tephritis bardanae, Schk.—The larvae of this species live in the flower-heads of *Arctium majus*, L., *not* causing a gall, as has been repeatedly stated. I have examined numerous heads after the flies have emerged; the black puparia appear to be either in, or between the achenes, and are cemented together into a solid mass which has, I presume, been taken to be the gall, but I can find no signs of hypertrophy. The larvae may be found in the heads in July, August, and September, the flies emerging in the latter two months. I have never found anything but empty puparia in the heads after the end of September.

Tephritis hyoscyami, L.—The larvae of this species live in the flower-heads of *Carduus crispus*, L. (Welted Thistle), in which they pupate. I have found them during July and August. The larvae are white, the puparia black, and the flies emerge during August.

Tephritis vespertina, Lw.—This species is probably double-brooded. The larvae live in the flower-heads of *Hypochoeris radicata*, L. (Long-rooted Cat's-ear). I have found the heads in early June with very young larvae and pupae, the flies emerging from the latter on 7th July; in early July with larvae and pupae, the flies emerging later in the month; at the end of July with pupae, the flies emerging from these in the first week of August. I have repeatedly examined the flower-heads in August but have never found any larvae in them.

Sphenella marginata, Fall.—This species I have had emerge freely from the swollen flower-heads of *Senecio vulgaris*, L. (Groundsel), all the flies emerging in August. A few I have bred from *S. aquaticus*, L. (Marsh Ragwort), these emerging in mid-September. I have also bred them from flower-heads of *S. jacobea*, L. (Common Ragwort), during September. The larvae of this species are at times heavily parasitized by a Braconid, *Microbracon variator*, Nees.

Ensina sonchi, L.—I have bred this Trypetid from the flower-heads of *Tragopogon pratensis*, L. (Goatsbeard), in August; from *Leontodon hispidum*, L. (Rough Hawkbit), in July; from *Hypochoeris radicata*, L., an unrecorded host-plant, in August; and from *Sonchus arvensis*, (Corn Sow-thistle), in the same month. I have also swept it from mixed Composites during July.

Gonioglossum wiedemanni, Mg.—The larvae of this species live singly in the berries of *Bryonia dioica*, L. (White Bryony); a number of these berries containing nearly full-fed larvae were collected on 11th August, on the following day a number of the larvae left the

fruits and pupated. The larvae are deep yellow in colour, the puparium is yellow at first, turning to red-brown within 24 hours; the last larvae left the fruits on 9th September. On 18th September, several yellow Braconids, *Opius testaceus*, Wesm., emerged from the pupae. The flies emerged during June of the following year.

Carphotricha (*Noeëta*) *pupillata*, Fall.—The larvae of this species inhabit the flower-heads of several species of *Hieracium* which swell somewhat and fail to open. There appears to be a considerable variation in the times of emergence; flower-heads of *H. umbellatum*, L. (Umbellate Hawkweed), taken on 16th July, with larvae in them gave the flies on 20th July; while others taken a month later did not yield the fly until mid-May of the following year, these latter heads had empty puparia in them in addition to the larvae. A few heads were found at the beginning of November with larvae in them, from which 6 ♂ ♂, and 3 ♀ ♀, of *pupillata* emerged in early May. From another batch of the flower-heads taken on 17th August, with both larvae and pupae in them, the flies emerged as follows:—24th August, 3 ♂ ♂, 4 ♀ ♀; 1st September, 6 ♂ ♂, 14 ♀ ♀; 3rd May, 2 ♂ ♂; 12th to 20th May, 6 ♂ ♂, 10 ♀ ♀. I have swept a few specimens in July from mixed *Compositae* in localities, where I have never found any plants of *Hieracium*.

I should like to tender my thanks to Mr. H. W. Andrews, F.R.E.S. for kindly identifying some of the Trypetids for me, and to Mr. G. E. J. Nixon, B.A. for identifying the Braconids.

Rhopalocera in Austria.

By F. B. WELCH and A. E. WELCH.

During July, 1933, we visited the following places in Southern and Western Austria:—

1. Eisenkappel, Carinthia. This village is about 20 miles south-east of Klagenfurt from which it is reached by motor-bus, and lies at a height of some 2000 feet in a valley running north out of the Karawanken Mts., which separate Austria from Yugo-Slavia. These hills are rather barren limestone towards the top, but the valleys are well watered and fertile with spruce forests above. To the south is the Seeberg Pass, 3850 ft., the Yugo-Slav frontier. Cold overcast weather had been experienced in June and this continued throughout our stay, 3rd-12th July, so that the season was backward compared with our former visit, (*Ent. Rec.* Vol. XLV., new series, p. 1.).

2. Mallnitz, Carinthia. 13th-20th July. This village lies at 3800 ft. on the southern slopes of the Höhe Tauern, the range separating the Inn and its tributaries from the Drau system. It is very easily accessible, lying about two hours down the main Villach line, which branches off the Innsbruck-Salzburg line at Schwarzach. Our hotel, the Drei Gemsen, was quite satisfactory and adequate English is spoken there. The country has the usual alpine vegetation; meadows in the bottom of the valleys, woods of spruce up to about 5200 ft., above which is moist moorland, running up to the snow and bare rock at 7000 ft. The weather during our stay was very mixed, only four days being fine.

3. Gaschurn, Vorarlberg. 22nd-31st July. The Vorarlberg is